
F-tone Networks 80km 1550nm SFP+ Optical Transceiver FTCS-151X-80DXX

Features

- ◆ Compliant with SFF-8431, SFF-8432 and IEEE802.3ae
 - ◆ Supports rate up to 10.3 Gb/s bit rates
 - ◆ 1G/2G/4G/ 8G/10G Fiber Channel applications.
 - ◆ Cooled EML transmitter and APD receiver
 - ◆ link length up to
-

supply voltage.



Figure1. Module Block Diagram

Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Unit |
|---------------------|--------|------|-----|------|
| Supply Voltage | Vcc | -0.5 | 3.8 | V |
| Storage Temperature | Tst | -40 | 85 | °C |
| Relative Humidity | Rh | 0 | 85 | % |

Operating Conditions

| Parameter | Symbol | Min | Typical | Max | Unit |
|----------------|--------|------|---------|------|------|
| Supply Voltage | Vcc | 3.13 | 3.3 | 3.47 | V |
| Supply current | Icc | - | 420 | 610 | mA |



| | | | | | |
|---------------------------|----------|-----|------|-----------|------|
| Data Rate | Mra | - | 10.3 | 11.3 | Gbps |
| Differential Output Swing | Vout P-P | 350 | - | 850 | mV |
| Rise/Fall Time | Tr / Tf | 24 | - | - | ps |
| Loss of Signal –Asserted | VOH | 2 | - | Vcc3+0.3- | V |
| Loss of Signal –Negated | VOL | 0 | - | +0.4 | V |

Digital Diagnostic Functions

| Parameter | Symbol | Min. | Max | Unit | Notes |
|-------------------------------|-----------|-------|-------|------|-----------------------|
| Accuracy | | | | | |
| Transceiver Temperature | DMI_Temp | -3 | +3 | degC | Over operating temp |
| TX Output optical power | DMI_TX | -3 | +3 | dB | |
| RX Input optical power | DMI_RX | -3 | +3 | dB | -3dBm to -12dBm range |
| Transceiver Supply voltage | DMI_VCC | -0.08 | +0.08 | V | Full operating range |
| Bias current monitor | DMI_Ibias | -10% | 10% | mA | |
| Dynamic Range Accuracy | | | | | |
| Transceiver Temperature | DMI_Temp | -5 | 70 | degC | |
| TX Output optical power | DMI_TX | -1 | +2 | dBm | |
| RX Input optical power | DMI_RX | -26 | -7 | dBm | |
| Transceiver Supply voltage | DMI_VCC | 3.0 | 3.6 | V | |
| Bias current monitor | DMI_Ibias | 0 | 100 | mA | |





Figure2.Electrical Pin-out Details

Pin Descriptions



Notes:

- [1] Module circuit ground is isolated from module chassis ground within the module.
- [2].should be pulled up with 4.7k – 10k ohms on host board to a voltage between 3.15V and 3.6V.
- [3]Tx_Disable is an input contact with a 4.7 k to 10 k pullup to VccT inside the module.
- [4]Mod_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull this contact up to Vcc_Host with a resistor in the range 4.7 k to 10 k .Mod_ABS is asserted "High" when the SFP+ module is physically absent from a host slot.
- [5] RS0 and RS1 are module inputs and are pulled low to VeeT with > 30 k resistors in the module.



Figure3. Host Board Power Supply Filters Circuit



Figure4. Host-Module Interface



Figure5. Mechanical Specifications

Regulatory Compliance

F-tone Networks SFP+ transceiver is designed to be Class I Laser safety compliant and is certified per the following standards:

| Feature | Agency | Standard |
|--------------------------|--------|---|
| Laser Safety | FDA | CDRH 21 CFR 1040 and Laser Notice No. 50 |
| Product Safety | UL | UL and CUL EN60950-2:2007 |
| Environmental protection | SGS | RoHS Directive 2002/95/EC |
| EMC | WALTEK | EN 55022:2006+A1:2007 EN 55024:1998+A1+A2:2003 |

Ordering information

| Part Number | Product Description |
|----------------|--|
| FTCS-151X-80D | 10Gbps, 1550nm SFP+, from 70km to 80km, 0 to +70°C |
| FTCS-151X-80DI | 10Gbps, 1550nm SFP+, from 70km to 80km, -40 to +85°C |

References

1. “Specifications for Enhanced Small Form Factor Pluggable Module SFP+”, SFF-8431, Rev 4.1, July 6, 2009.
2. “Improved Pluggable Formfactor”,SFF-8432, Rev 4.2, Apr 18, 2007
3. IEEE802.3ae – 2002
4. “Diagnostic Monitoring Interface for Optical Transceivers” SFF-8472, Rev 10.3, Dec 1, 2007

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